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**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Docket Number (Optional)

4015-5191

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on \_\_\_\_\_

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Typed or printed name \_\_\_\_\_

Application Number

10/799,322

Filed

12 March 2004

First Named Inventor

Jonsson

Art Unit

2611

Examiner

Flores

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the



applicant/inventor.



assignee of record of the entire interest.

See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
(Form PTO/SB/96)



attorney or agent of record.

Registration number 55,275



attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 \_\_\_\_\_



Signature

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919-854-1844

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15 December 2008

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.



\*Total of 1 forms are submitted.

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In a Final Office Action dated June 25, 2008, claims 1-9, 11-24, 26-38, and 40-47 of the pending application were rejected as allegedly obvious over a combination of an IEEE journal article by Bottomley and a patent application publication by Reznik (US 2003/0053526). In a response dated 25 August 2008 (the "8/25/08 Response"), the Applicant pointed out that no combination of Bottomley and Reznik teaches "estimating a received signal quality based on a scaled estimate of inter-symbol interference" or "a cancellation metric comprising a scalar value representing characterized or measured inter-symbol interference cancellation performance of the receiver." (See 8/25/08 Response, pp. 3-6.) In particular, Applicant pointed out that each of the independent claims recites that a cancellation metric comprises a scalar value that

represents characterized or measured cancellation performance of an inter-symbol interference cancellation receiver.

In response, the Examiner produced a second Final Office Action dated 17 September 2008, imposing nearly identical rejections accompanied by arguments that focused on selected details of Applicant's arguments. Applicant pointed out several problems with this 2<sup>nd</sup> Final Office Action in a response dated 17 November 2008 (the "11/17/08 Response"). In particular, the Applicant pointed out that it is irrelevant whether or not Reznik's "matrix S" comprises scalar values, as the second Final Office Action argues, since Reznik in no event discloses that the matrix S is used to scale an estimate of inter-symbol interference, as recited in the present claims. Further, the Applicant pointed out that Reznik's matrix S does not include any value that represents characterized or measured inter-symbol interference cancellation performance of the receiver. (See 11/17/08 Response, pp. 2-5.)

Applicant next received an Advisory Action, dated 25 November 2008, maintaining the rejections. The Advisory Action presents brief arguments that engage bits and pieces of the Applicant's previous arguments. However, these arguments fail to engage two essential points: the cited combination of references fails to disclose or suggest a scalar value that represents measured or characterized cancellation performance of a receiver, and the cited combination of references fails to disclose or suggest estimating the received signal quality based on the scaled estimate of inter-symbol interference. Because these are features of all of the pending claims, the rejections are improper and should be withdrawn.

***The Cited References Fail to Disclose or Suggest a Scalar Value that Represents Measured or Characterized Cancellation Performance of a Receiver.***

The Advisory Action (at page 2) includes arguments that purport to show, *inter alia*, that:

1. the inter-symbol cancellation performance of Reznik's receiver depends on Matrix A;

2. Matrix A is used to compute Matrix S, which includes a scalar; and
3. Reznik suggests using "such a scalar value" to scale an estimate of inter-symbol interference in a received signal.

The Advisory Action's arguments once again miss the mark. Whether or not these three premises are correct (at least the third, in fact, is not), the claims specifically recite a scalar value that "represent[s] characterized or measured inter-symbol interference cancellation performance of the receiver." Neither Bottomley nor Reznik includes any hint of a scalar value that represents measured inter-symbol interference cancellation performance of a receiver. Further, neither Bottomley nor Reznik includes any hint of a scalar value that represents characterized cancellation performance of a receiver. Thus, no combination of Bottomley with Reznik can possibly disclose or suggest the scaling of an interference estimate with a scalar value that represents cancellation performance of the receiver. The fact that the cancellation performance of Reznik's receiver implicitly depends upon various parameters is irrelevant – none of these parameters is in any way representative of measured or characterized receiver performance. All of the current rejections are improper for this reason alone.

***The Cited References Fail to Disclose or Suggest Estimating Received Signal Quality Based On a Scaled Estimate of Inter-Symbol Interference.***

Independent claim 1 concludes with a step of "estimating the received signal quality based on the scaled estimate of inter-symbol interference." Independent claims 17, 30, and 45 include similar features. The Final Office Action of 9/17/08 admits that the combination of Bottomley with Reznik fails to "explicitly teach" this estimation of received signal quality.

However, the Office Action goes on to assert that Reznik "does suggest" this feature of the pending claims, citing several figures and paragraphs in Reznik that refer to "soft-decision" and "hard-decision" symbol generation processes. (See Final Office Action of 9/17/08, page 6.)

Apparently in recognition of the fact that Reznik actually says nothing about estimating received signal quality, as required by the present claims, the Office Action continues: "Furthermore, one skilled in the art would know that these decisions may be used to compute the signal quality." (Emphasis added.)

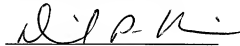
This last assertion, if correct at all, is at best drastically simplified, and is in any event unsupported by the Office Action's citations to Bottomley and Nielsen (US 2002/0080863). In any event, this argument fails to establish a *prima facie* case for the legal conclusion of obviousness. Although Reznik discusses hard- and soft-decision processes, Reznik is absolutely silent with respect to estimating received signal quality, and does not suggest using decision statistics for such a purpose. In other words, as pointed out in the 11/17/08 Response, even if Reznik expressly taught the calculation of signal quality (e.g., SNR) from hard or soft decision statistics, it would nonetheless fall short of disclosing or suggesting the features of the present claims, since the claims recite that the signal quality is estimated based on a scaled estimate of inter-symbol interference. Of course, Reznik does not expressly teach the calculation of signal quality from hard or soft decision statistics, as the Final Office Action admits. Neither of the cited references discloses or suggests such a technique, and, more importantly, the cited combination fails to disclose or suggest estimating the received signal quality based on a scaled estimate of inter-symbol interference, as presently claimed.

As demonstrated above and in Applicant's prior responses, the cited combination of Bottomley and Reznik fails to disclose or suggest the claimed invention, as at least two features of the present claims are not found or suggested by the combination. The arguments presented in the Final Office Actions and the Advisory Action twist the teachings of Reznik beyond recognition, so that a matrix somehow becomes a scalar, and so that a parameter that is fed

into an interference cancellation algorithm somehow becomes a value that represents measured or characterized performance of the receiver.

These arguments serve only to obscure the essential fact that neither Reznik's interference cancellation receiver nor Bottomley's interference-suppressing RAKE receiver employ the inventive techniques for determining received signal quality that are embodied in the present claims. The Applicant thus respectfully requests withdrawal of the present rejections. Further, in view of the fact that the present claims have been reviewed three times, following two earlier reviews of substantially similar claims, the Applicant submits that the pending claims should be immediately allowed to issue, and respectfully requests a Notice of Allowance as to all claims.

Respectfully submitted,  
COATS & BENNETT, P.L.L.C.



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